

This listing of claims will replace all prior versions, and listings, of claims in the application:

1 Claim 1 (currently amended): A method for use in a system at a premises, the system
2 having at least one terminal, a local area network including the at least one terminal, and
3 coupled with units that terminate at least two communications links between the premises
4 and a communications provider facility located off of the premises, the method
5 comprising:
6 a) accepting data on the local area network;
7 b) determining whether the data accepted concerns establishing a connection or is
8 part of an established connection;
9 c) if it is determined that the data accepted concerns establishing a connection,
10 then
11 i) selecting, at the premises, only one of the at least two communications
12 links based on a policy, wherein the selection is controlled such that
13 selection of more than one of the at least two communications links may
14 not occur.
15 ii) assigning the selected one of the at least two communications links to a
16 session to be associated with the data accepted, and
17 iii) forwarding the data accepted to only the selected one of the at least
18 two communications links and not to any non-selected ones of the at least
19 two communications links; and
20 d) if it is determined that the data accepted is part of an established connection,
21 then forwarding the data accepted to the assigned communications link.

1 Claim 2 (original): The method of claim 1 wherein the data is a PPPoE frame.

1 Claim 3 (original): The method of claim 2 wherein the act of determining whether the
2 data accepted concerns establishing a connection or is part of an established connection is
3 based on an Ether-type field of the PPPoE frame.

1 Claim 4 (original): The method of claim 1 wherein if the data is a PPPoE Active
2 Discovery Initiation packet, then determining that the data concerns establishing a
3 connection.

1 Claim 5 (original): The method of claim 1 wherein if the data is a packet selected from a
2 group of packets consisting of (a) a PADO packet, (b) a PADR packet, (c) a PADS
3 packet, and (d) a session stage packet, then determining that the data is part of an
4 established connection.

1 Claim 6 (original): The method of claim 1 further comprising:
2 c) if it is determined that the data accepted concerns establishing a connection,
3 then
4 iv) storing the selected one of the at least two communications links and
5 an associated session ID.

1 Claim 7 (original): The method of claim 6 further comprising:
2 c) if it is determined that the data accepted concerns establishing a connection,
3 then storing a terminal ID.

1 Claim 8 (previously presented): The method of claim 1 wherein the policy upon which
2 the one of the at least two communications links is selected is a function selected from a
3 group of functions consisting of (a) past selection states, (b) a terminal source of the
4 accepted data, (c) a user associated with the accepted data, and (d) a time.

1 Claim 9 (original): The method of claim 1 further comprising:
2 e) if it is determined that the data accepted is part of an established connection,
3 and that the data is a request to terminate the connection, then freeing the selected
4 one of the at least two communications links.

1 Claim 10 (original): The method of claim 6 further comprising:

- 2 e) if it is determined that the data accepted is part of an established connection,
3 and that the data is a request to terminate the connection, then
4 i) freeing the selected one of the at least two communications links, and
5 ii) permitting the stored selected one of the at least two communications
6 links and the associated session ID to be overwritten.

1 Claim 11 (original): A method of claim 1 wherein the connection is a connection to a
2 PPPoE session server.

1 Claim 12 (currently amended): A method for use in a system at a premises, the system
2 having at least one terminal, a local area network including the at least one terminal, and
3 coupled with units that terminate at least two communications links between the premises
4 and a communications provider facility located off of the premises, the method
5 comprising:

- 6 a) accepting data originating from the at least one terminal and from the at least
7 two communications links; and
8 b) forwarding data towards the at least one terminal and towards the at least two
9 communications links,

10 wherein, upon receiving a session request from the at least one terminal,

- 11 i) assigning, at the premises, only one of the at least two communications
12 links to the session of the session request based on a policy, wherein the
13 assignment is controlled such that assignment of more than one of the at
14 least two communications links may not occur, and
15 ii) forwarding the session request to only the assigned one of the at least
16 two communications links and not to any non-selected ones of the at least
17 two communications links.

1 Claim 13 (original): The method of claim 12 wherein, upon receiving a session offer,
2 forwarding the session offer towards the terminal which requested the session.

1 Claim 14 (original): The method of claim 13 wherein, upon receiving a session
2 acceptance from the at least one terminal, forwarding the session acceptance to the
3 assigned one of the at least two communications links.

1 Claim 15 (original): The method of claim 14 wherein, upon receiving a session
2 confirmation, forwarding the session confirmation towards the terminal which sent the
3 session acceptance.

1 Claim 16 (original): The method of claim 12 wherein, upon receiving a data with an
2 associated session identification, forwarding the data to the one of the at least two
3 communications links associated with the session identification.

1 Claim 17 (original): The method of claim 12 wherein the act of assigning one of the at
2 least two communications links based on a policy, further includes,
3 A) storing the assigned communications link and an
4 identification of the terminal sending the session request.

1 Claim 18 (original): The method of claim 12 wherein the act of forwarding the session
2 request to the assigned one of the at least two communications links, further includes,
3 A) forwarding the session request and the assigned
4 communications link to a line forwarding process, and
5 B) forwarding the session request from the line forwarding
6 process to the assigned communications link.

1 Claim 19 (previously presented): The method of claim 12 wherein the policy upon which
2 the one of the at least two communications links is selected is a function of factors
3 selected from a group of factors consisting of (a) past selection states, (b) a terminal
4 source of the accepted data, (c) a user associated with the accepted data, and (d) a time.

1 Claim 20 (currently amended): A link selection unit for use in a system at a premises, the
2 system (i) including a local area network including at least one terminal and (ii)

3 terminating at least two communications links from the premises to a communications
4 provider facility off of the premises, the link selection unit comprising:
5 a) means for accepting data from the local area network;
6 b) means for determining a connection state based on the data accepted;
7 c) means for selecting, at the premises, only one of the at least two
8 communications links when the means for determining a connection state
9 determines that a connection has not yet been established, wherein the means for
10 selecting preclude selection of more than one of the at least two communications
11 links;
12 d) means for forwarding data for an unestablished connection only to the selected
13 one of the at least two connection states and not to any non-selected ones of the at
14 least two communications links; and
15 e) means for forwarding data to a selected one of the at least two communications
16 links when the means for determining a connection stated determines that a
17 connection has already been established.

1 Claim 21 (original): The link selection unit of claim 20 further comprising:
2 e) link termination units, each of the link termination units terminating an
3 associated one of the at least two communications links.

1 Claim 22 (original): The link selection unit of claim 21 wherein each of the link
2 terminations units is an ADSL terminating unit-remote.

1 Claim 23 (original): The link selection unit of claim 20 further comprising:
2 e) a storage device for storing policies used by the means for selecting one of the
3 at least two communications links to determine which of the at least two
4 communications links to select.

1 Claim 24 (previously presented): The link selection unit of claim 23 wherein the policies
2 are a function of factors selected from a group of factors consisting of (a) past selection

3 states, (b) a terminal source of the accepted data, (c) a user associated with the accepted
4 data, and (d) a time,.

1 Claim 25 (original): The link selection unit of claim 23 further comprising:
2 f) means for managing the policies stored in the storage device.

1 Claim 26 (previously presented): The method of claim 1 wherein data looping in the
2 system, before session establishment, is prevented.

1 Claim 27 (previously presented): The method of claim 12 wherein data looping in the
2 system, before session establishment, is prevented.

1 Claim 28 (previously presented): The link selection unit of claim 20 wherein data
2 looping in the system, before session establishment, is prevented.

1 Claim 29 (previously presented): The link selection unit of claim 20 wherein each of
2 the at least two communications links are terminated by simple modems without
3 learning bridge logic.

1 Claim 30 (previously presented): The method of claim 1 wherein data looping in the
2 system, caused by session establishment, is prevented because the data accepted is
3 forwarded to only the selected one of the at least two communications links and not to
4 any non-selected ones of the at least two communications links.

1 Claim 31 (previously presented): The method of claim 12 wherein data looping in the
2 system, caused by session establishment, is prevented because the session request is
3 forwarded to only the selected one of the at least two communications links and not to
4 any non-selected ones of the at least two communications links.

1 Claim 32 (previously presented): The link selection unit of claim 20 wherein data
2 looping in the system, caused by session establishment, is prevented because the data

3 accepted is forwarded to only the selected one of the at least two communications
4 links and not to any non-selected ones of the at least two communications links.

1 Claim 33 (previously presented): The method of claim 1 wherein data looping in the
2 system, of PPPoE Active Discovery Offer packets, is prevented because PPPoE
3 Active Discovery Offer packets are forwarded to only the selected one of the at least
4 two communications links and not to any non-selected ones of the at least two
5 communications links.

1 Claim 34 (previously presented): The method of claim 12 wherein data looping in the
2 system, of PPPoE Active Discovery Offer packets, is prevented because PPPoE
3 Active Discovery Offer packets are forwarded to only the selected one of the at least
4 two communications links and not to any non-selected ones of the at least two
5 communications links.

1 Claim 35 (previously presented): The link selection unit of claim 20 wherein data
2 looping in the system, of PPPoE Active Discovery Offer packets, is prevented
3 because PPPoE Active Discovery Offer packets are forwarded to only the selected
4 one of the at least two communications links and not to any non-selected ones of the
5 at least two communications links.

1 Claim 36 (previously presented): The method of claim 1 wherein the act of selecting
2 is performed before the data is communicated over any of the at least two
3 communications links.

1 Claim 37 (previously presented): The method of claim 12 wherein the act of
2 assigning is performed before the data is communicated over any of the at least two
3 communications links.

- 1 Claim 38 (previously presented): The link selection unit of claim 20 wherein the
- 2 means for selecting selects one of the two communications links before the means for
- 3 forwarding data forwards the data for the unestablished connection.